

DRAFT REPORT (V1) – FOR REVIEW ONLY

ENVIRONMENTAL SUBSURFACE ASSESSMENT

American Plating Services

4004 E. Monument Street | Baltimore, Maryland 21205

Draft Report Issued:

June 25, 2014

Prepared for:

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Project #13-0028.01



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1.0 BACKGROUND

PMT & Associates, Inc. (PMT) was retained by Mr. David J. Naumann, Sr., president of American Plating Services to conduct an environmental subsurface assessment of the American Plating Services facility (subject property) located 4004 E. Monument Street in Baltimore, Maryland. The United States Environmental Protection Agency (U.S. EPA) has concluded that the facility has failed to comply with the requirements of COMAR 26.13.05.03B though its failure to design, construct, maintain, and operate the facility to properly minimize the possibility of a release of hazardous materials to the subsurface of the property. The EPA has issued an administrative order on consent under Section 3013 of the Resource Conservation and Recovery Act (RCRA). The purpose of the investigation is to assess the environmental condition of the subsurface of the property under the building. The general site location map is included as Figure 1.0.

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2.0 SAMPLING PROCEDURES

2.1 SUMMARY OF SAMPLING EVENT

On January 2 and 4, 2014, PMT personnel oversaw the completion of 10 soil borings to a maximum depth of 10 feet below surface under the direct supervision of the U.S. EPA. The drill rig was operated by Advanced Environmental Concepts, Inc. (AEC) of Havre de Grace, Maryland. The field work and sample collection was conducted in accordance with the U.S. EPA approved draft work plan (version 3, issued November 21, 2013) prepared by PMT, with the exception to the following noted changes and adjustments that were made due to unforeseen field conditions:

1. Sampling locations SB08 and SB10 needed to be moved due to the hydropunch rig experiencing refusal. The revised sampling locations are shown in Figure 2.1.
2. Suspect petroleum-impacted soils were visibly and physically observed in the soil borings completed at SB08, SB09, and SB10; therefore, soil samples were collected in the visible impacted areas and submitted for additional analysis.

A total 23 soils samples was collected and submitted to Martell Laboratories JDS, Inc. (Martell) of Baltimore, Maryland, for fixed laboratory analysis: Two (2) soil samples were collected from 10 soil boring locations (SB01 – SB10) and submitted for RCRA 8 metals (EPA Method 6010C/7471), hexavalent chromium (Cr-VI, SM 3500-Cr B-09), and cyanide (Cn, EPA Method 335.4) analysis. One (1) additional soil sample was collected from SB03, SB09, and SB10 and submitted for total petroleum hydrocarbons – gasoline-range organics / diesel-range organics (TPH GRO/DRO, EPA Method 8015B) and volatile organic compounds (VOCs, EPA Method 8260C) analysis. A summary of the soils collected and submitted for analysis is included below in Table 2.1a.

Table 2.1a Summary of Soils Collected for Analysis

Soil Boring Location	Sample ID	Depth (feet)	Analysis Performed
SB01	AP-010214-SB01A	0-1	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB01B	9-10	
SB02	AP-010214-SB02A	1-2	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB02B	5-6	
SB03	AP-010414-SB03A	0-1	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010414-SB03B	7-8	TPH GRO/DRO, VOCs
	AP-010414-SB03C	5-6	
SB04	AP-010214-SB04A	0-1	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB04B	9-10	
SB05	AP-010214-SB05A	3-4	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB05B	5-6	
SB06	AP-010214-SB06A	1-2	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB06B	6-7	
SB07	AP-010214-SB07A	3-4	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB07B	9-10	
SB08	AP-010214-SB08A	3-4	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB08B	9-10	TPH GRO/DRO, VOCs
	AP-010214-SB08C	5-6	
SB09	AP-010214-SB09A	3-4	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010214-SB09B	8-9	TPH GRO/DRO, VOCs
	AP-010214-SB09C	5-6	
SB10	AP-010414-SB10A	2-3	RCRA 8 Metals, Hexavalent Chromium, Cyanide
	AP-010414-SB10B	4-5	
	AP-010414-SB10C	5-6	TPH GRO/DRO, VOCs

The soils were classified and soil boring logs were generated in the field. A summary of the soils observed is included below in Table 2.1b.

Table 2.1b Description of Soils Observed

Soil Boring Location	Description	Other Observations
SB01	0-1' – light gray/brown silty clay 1-7' – light brown, poorly sorted, medium grain sand with pebbles 7-8' – medium brown, well sorted, fine grain sand 8-10' – gray silty clay	No additional observations noted.
SB02	0-6' – medium brown, well sorted, medium grain sand 6-7' – gray silty clay 7-10' – medium brown, well sorted, medium grain sand	No additional observations noted.
SB03	0-1' – gravel/crushed concrete 1-1.5' – medium brown silty sand 1.5-2' – medium brown, well sorted, medium grain sand 2-7' – medium brown, moderately sorted, medium to coarse grain sand 7-8' – gray silty clay 8-10' – yellow, moderately sorted coarse grain sand with pebbles	Slight petroleum odors observed from approximately 4-6'. No visible staining noted.
SB04	0-9' – medium brown, moderately sorted, coarse grain sand with pebbles 9-10' – gray silty clay	No additional observations noted.
SB05	0-1' – gravel/crushed concrete/red brick 1-10' – medium brown, poorly sorted coarse grain sand with pebbles	No additional observation noted.
SB06	0-1' – gravel/crushed concrete 1-2' – dark brown, well sorted, fine grain sand 2-9' – medium brown, poorly sorted, coarse grain sand with pebbles 9-10' – light gray, well sorted, fine grain sand	No additional observation noted.
SB07	0-1 – gravel/crushed concrete 1-6 – medium brown, poorly sorted, coarse grain sand with pebbles 6-7 – gray silty clay 7-8 – medium brown, poorly sorted, coarse grain sand with pebbles 8-10 – gray silty clay	Slight petroleum odor observed at approximately 10'. No visible staining noted.
SB08	0-1 – gravel/crushed concrete 1-10 – medium brown, moderately sorted, medium grain sand	Visibly stained soils from approximately 5-9'. Strong petroleum odor.
SB09	0-1' – medium brown, fine grain sand 1-5' – gray silty clay 5-9' – brown silty sand 9-10' – reddish brown well sorted fine grain sand	Visibly stained soils from approximately 4-8'. Strong petroleum odor.
SB10	0-1' – gravel/crushed concrete 1-2' – medium brown, moderately sorted, fine grain sand 2-10' – medium grain well sorted sand	Visibly stain soils from approximately 3.5-9'. Strong petroleum odor.

At the time of the soil collection, EPA personnel field-screened the recovered soil borings for metal concentration using a handheld X-ray fluorescent (XRF) analyzer. The purpose of the field screening the soils was to select the appropriate interval to collect soils for submission for analysis. The sample selection was biased toward potential contamination according to field screening results. Table 2.1c includes a summary of the results of the XRF field-screening result with the selected sample intervals indicated with an asterisk (*).

Table 2.1c XRF Field Screening Results

Soil Boring Location	Depth (Feet)	Recorded Field Readings (ppm)
SB01	0-1*	174 Cr, 163 Ni, 16 Pb
	5-6	445 Cr, 189 Ni, 31 Pb
	7-8	379 Cr, 62 Ni, 47 Pb
	8-9	367 Cr, 46 Ni, 16 Pb
	9-10*	599 Cr, 77 Ni, 48 Pb
SB02	1-2*	1706 Cr, 80 Pb
	5-6*	421 Ba, 1507 Cr, 52 Pb
	7-8	213 Cr, 9 Pb
	8-9	704 Cr, 45 Pb
	9-10	177 Cr, 10 Pb
SB03	0-1*	415 Ba, 120 Cr, 11 Pb
	3-4	254 Ba, 95 Cr, 10 Pb, 36 Ag
	4-5	142 Cr, 31 Pb
	7-8*	401 Ba, 151 Cr, 9 Pb
	8-9	220 Ba
	9-10	136 Cr, 34 Cd
SB04	0-1*	449 Ba, 43 Ni, 12 Pb
	5-6	241 Cr
	7-8	183 Cr, 95 Cd
	8-9	101 Cr
	9-10*	418 Ba, 669 Cr, 31 Pb
SB05	0-1	ND
	3-4*	103 Pb
	5-6*	359 Cr, 10 Pb
	6-7	156 Cr
	7-8	333 Ba, 239 Cr, 9
	9-10	166 Cr, 15 Pb
SB06	1-2*	452 Cr, 29 As, 310 Pb
	4-5	99 Cr, 16 Pb
	6-7*	119 Cr
	8-9	ND
	9-10	176 Ba, 174 Cr, 12 Pb
SB07	3-4*	143 Cr, 34 Ni, 12 Pb, 31 Ag
	5-6	125 Cr, 32 Ni, 50 Ag
	7-8	187 Cr, 8 Pb
	8-9	104 Cr
	9-10*	298 Cr, 14 Pb
SB08	0-1	232 Cr, 37 Pb, 48 Cd
	3-4*	545 Ba, 20 Pb
	4-5	327 Ba, 104 Cr, 16 Pb, 54 Ni
	7-8	794 Cr, 9 Pb
	8-9	343 Ba, 563 Cr, 32 Ni
	9-10*	912 Cr
SB09	3-4*	403 Ba, 140 Cr, 11 Pb
	5-6	9 Pb
	7-8	ND
	8-9	284 Ba, 94 Cr, 8 Pb
	9-10*	348 Ba, 9 Pb
SB10	2-3*	339 Ba, 154 Cr, 19 Pb
	4-5*	97 Cr, 8 Pb
	6-7	ND
	7-8	ND
	9-10	91 Cr

* = soil sample collected for laboratory analysis of RCRA 8 Metals, ND = no RCRA 8 Metals detected during field screening operations.

The approximate soil boring locations are identified in Figure 2.1.

2.2 REQUIRED SAMPLING EQUIPMENT AND MATERIALS

The following materials were necessary to conduct sampling activities at the subject property:

1. Geotech Geoprobe™ Hydro-punch Rig (and associated equipment)
2. Concrete core drill
3. Non-phosphate Detergent
4. Organic-free Water (Potable Water)
5. N-DEX® Brand Nitrile Gloves
6. 4 oz Standard Clear Glass Sampling Jars with Teflon Liner
7. Ziploc® Brand Bags
8. Environmental Sample Labels
9. Sharpie® Brand Black Fine Point Permanent Marker
10. Bound Field Book
11. Ice Chest
12. Hardhats
13. Eye protection
14. Steel-toed Boots
15. Ear Plugs

2.3 HEALTH AND SAFETY PRECAUTIONS

All persons involved with the sampling activity outlined above used “Level D” protection. “Level D” protection is defined by the Occupational Safety & Health Administration (OSHA) as, “a work uniform affording minimal protection: used for nuisance contamination only.” This level of personal protection will include nitrile gloves (to prevent sample and nuisance contamination), steel-toed boots, eye protection, ear plugs, and hardhats. In addition, all personnel will adhere to onsite health and safety procedures.

2.4 FIELD DOCUMENTATION

All field notes for sampling activities were recorded to document PMT personnel field activities. The field notes provide a record of all events of the day that correlate to the sampling activities at the subject property. All entries were recorded in ink and included the following, where applicable:

1. Date / Time
2. Weather Conditions
3. Sampling Team Members
4. Visual Condition of the Sampling Area
5. Description and Deviations from the Sampling Plan
6. Maps and Sketches of the Sampling Area.
7. Observations that May Influence Sampling Activity
8. Soil Boring Log / Sedimentary Stratigraphy Observations

2.5 STANDARD SAMPLING PROCEDURES

Geoprobe® direct-push drilling services were used to obtain the soil samples. The soil samples were collected by hydraulically driving an open MacroCore or piston-type sampler to the top of the desired sample interval. The piston within the sampler was released and the pipe advanced through the target interval. The MacroCore sleeves entered in the sampler contained a non-reactive plastic liner. After the drive rod was removed from the soil, the liner containing the soil column was removed. Soil samples were hand packed into 4-ounce standard clear glass sampling jars equipped with Teflon-lined caps using new nitrile gloves for each sample. Once the sample was collected and labeled, it was placed into a Ziploc® brand bag for added protection prior to being place in a cooler on-ice.

After sample containers were filled, marked, and labeled, they were placed in an ice chest and cooled to 4 degrees Celsius (approximately 40 degrees Fahrenheit). Ice was placed in double plastic bags and placed on top of the containers. Containers were placed upright, with ice in plastic on top of the samples. The ice chests were delivered to the analytical laboratory within the appropriate handling time. Once the samples had been collected, the soil borings were backfilled with the leftover spoil, plugged with bentonite chips, and the floor was repaired using cold patch.

All sampling equipment was field decontaminated using phosphate-free detergent and contaminate-free (potable) water between each boring locations.

2.6 FIELD QA/QC ACTIVITIES

Trip Blank

Trip blanks were used to determine if contaminants are introduced to the field samples during sample handling, storage, and transportation. This sample was prepared by the laboratory and transported and stored with the routine samples. The trip blank was not opened in the field, but was subjected to the same handling and transportation procedures as the normal samples. One (1) trip blank was used for the duration of the assessment.

Field Blank

Field blanks were used to determine the level of contamination introduced into the sample due to sampling technique. These samples consist of the source water used in decontamination (contaminant free, de-ionized or reagent grade water). One (1) sample from each sampling event (workday) and each source of water used was collected and analyzed. Two (2) field blanks were used for the duration of the assessment.

Rinsate

Rinsate samples were used to determine if the sampling equipment was causing contamination of the samples. This sample was collected by pouring clean (contaminant free) de-ionized or reagent grade water (provided by the laboratory) over the sample retrieval equipment after the equipment has been field decontaminated. The rinsate collection was performed once during each sampling event (workday) at the approximate middle of the event. Two (2) rinsate samples were used during the duration of the assessment.

Labels

Sampling personnel affixed a label to each sample container with the unique sample number marked in ink. This sample number was date and time encoded. In addition, the analysis method, depth of sample, and sample personnel was noted.

Photographic Documentation

Digital photographs of the sampling area, site conditions, and sampling procedures were taken as supplemented documentation to the field book. See Appendix A: Photographic Documentation.

Chain of Custody (COC) Records

The Chain of Custody (COC) documented the possession and handling of individual samples from the time of field collection to the laboratory submittal. This record included the following information:

- Sample Number
- Printed name of Sampler, Signature, and Date of Collection
- Printed name of Laboratory Receiver, Signature, and Date of Reception
- Requested Analysis
- Type and Number of Containers

The sample deliverer retained a copy of the COC after delivery. The COC included sufficient spaces to allow for the transfer of the samples and supporting documents.

3.0 ANALYTICAL RESULTS

3.1 ANALYTICAL SUMMARY

The following tables (Tables 3.1a, 3.1b, and 3.1c) provide a summary of the analytical results. Only detectable compounds are shown in the tables. Results were compared to the Maryland Department of the Environment (MDE) Cleanup Standards for residential and non-residential soils, and to the US EPA Regional Screening Levels (RSLs) for residential soils and industrial soils. The complete laboratory generated report is included as Appendix B: Laboratory Generated Report.

Table 3.1a RCRA 8 metals, hexavalent chromium, and cyanide detected in soils

	Silver	Arsenic	Barium	Cadmium	Chromium	Mercury	Lead	Selenium	Hexavalent Chromium	Cyanide
SB01A	-	3.8	42	4.9	85	-	-	-	2.4	0.52
SB01B	-	4.4	9.2	-	160	-	3.7	-	6.3	1.0
SB02A	-	20	9.9	15	1 100	-	55	-	0.88	460
SB02B	-	16	9.9	-	730	-	12	-	20	8.5
SB03A	-	4.6	32	2.8	110	-	11	-	1.1	31
SB03B	-	1.6	-	5.0	15	-	3.5	-	0.6	-
SB04A	-	2.3	14	3.7	37	-	3.0	-	-	11
SB04B	-	6.7	8.5	9.7	300	-	6.8	-	4.5	50
SB05A	-	3.7	31	1.1	87	-	140	-	-	310
SB05B	-	5.5	6.4	-	220	-	1.8	-	-	63
SB06A	-	2.5	7.4	6.3	120	0.097	20	-	-	0.43
SB06B	-	1.9	6.0	-	75	-	7.7	-	0.80	9.2
SB07A	-	2.8	19	17	58	-	6.7	-	-	640
SB07B	-	4.8	8.9	-	130	-	2.1	-	25	12
SB08A	-	4.7	28	-	35	-	5.5	-	1.2	4.4
SB08B	-	6.3	8.9	-	260	-	2.0	-	1.5	2.4
SB09A	-	2.0	22	-	22	-	-	-	0.64	-
SB09B	-	1.8	6.7	-	14	-	-	-	-	-
SB10A	-	1.9	21	-	18	-	-	-	-	-
SB10B	-	7.2	14	-	28	-	3.2	-	1.5	1.2
Detection Limit	2	1	5	1	1	0.083	1	2	0.4	0.25
MDE-RCS	39	0.43	1 600	3.9	23	2.3	400	39	23	160
MDE-NRCS	510	1.9	20 000	51	310	31	1 000	510	310	2 000
RSL-RS	390	0.67	15 000	70	n/a	9.4	400	390	0.3	n/a
RSL-IS	5 800	3.0	220 000	980	n/a	40	800	5 800	6.3	n/a
ATC	n/a	4.9	99	1.1	30	n/a	61	n/a	n/a	n/a

Table 3.1b VOCs detected in soils

	Acetone	Cyclohexane	Dichloromethane	Ethylbenzene	Isopropylbenzene	Methylcyclohexane	Xylenes
SB03C	0.027	-	-	-	-	-	-
SB08C	0.38	1.2	-	1.3	0.16	3	0.89
SB09C	0.23	0.06	0.084	0.63	0.808	0.51	-
SB10C	0.17	0.94	-	-	0.33	9.6	0.89
Detection Limit	0.01	0.05	0.05	0.05	0.05	0.25	0.05
MDE-RCS	7 000	n/a	n/a	780	780	n/a	1 600
MDE-NRCS	92 000	n/a	n/a	10 000	10 000	n/a	20 000
RSL-RS	61 000	6 500	n/a	5.8	n/a	n/a	580
RSL-NRS	670 000	27 000	n/a	25	n/a	n/a	2 500

Table 3.1c TPH detected in soils

	Diesel-range organics	Gasoline-range organics
SB03C	10	-
SB08C	7 900	94
SB09C	4 100	53
SB10C	5 400	94
MDE-RCS	230	230
MDE-NRCS	620	620

Values shown in parts per million (ppm or mg/kg). - = value reported below detection limit. MDE-RSC = Maryland Department of the Environment

Residential Cleanup Standard for soils. MDE-NRCS = Maryland Department of the Environment non-residential cleanup standard for soils. RSL-RS = EPA

Region III Screening Level for residential soils. RSL-IS = EPA Region III Screening Level for industrial soils. Values shown in **bold** exceed the MDE-NRCS and/or the RSL-IS, and the ATC, where applicable.

3.2 DISCUSSION OF RESULTS

3.2.1 RCRA 8 METALS

3.2.1.1 ARSENIC

As shown in Table 3.1a, elevated concentrations of arsenic were detected in the soils collected at SB02, SB04, SB05, SB08, and SB10. The concentrations detected in the soils collected ranged from 1.6 – 20 ppm with the highest concentrations detected at SB02 (20 ppm at 1-2 feet below surface and 16 ppm at 5-6 feet below surface). The USGS published anticipated typical concentration of arsenic in soils in Central Maryland is 4.9 ppm. SB02 is located in the middle of Area 1 of the facility as shown on Figure 2.1. Given the known elevated concentrations of occurring arsenic in the State of Maryland, the concentrations detected at SB04, SB05, SB08, and SB10 are likely to be naturally occurring; however, the concentrations detected at SB02 are not likely to be naturally occurring.

3.2.1.2 CHROMIUM

As shown in Table 3.1a, elevated concentrations of chromium were detected in the soils collected at SB02. The concentrations detected in the soils collected ranged from 14 – 1,100 ppm with the highest concentrations detected at SB02 (1,100 ppm at 1-2 feet below surface and 730 ppm at 5-6 feet below surface). The USGS published anticipated typical concentration of chromium in soils in Central Maryland is 30 ppm. SB02 is located in the middle of Area 1 of the facility as shown on Figure 2.1. The concentrations detected at SB02 are no likely to be naturally occurring.

3.2.2 HEXAVALENT CHROMIUM

As shown in Table 3.1.a, elevated concentrations of hexavalent chromium were detected in the soils collected at SB01, SB02, and SB07. The concentrations of hexavalent chromium ranged from 0.6 – 25 ppm with the highest concentrations detected at SB07 (25 ppm at 9-10 feet below surface). Hexavalent chromium is an anthropogenic substance, therefore there is no ATC value associated. SB07 is located in Area 3, at the upstream location of a known former waste trench.

3.2.3 CYANIDE

As shown in Table 3.1.a, no elevated concentrations of cyanide were detected in any of the soils collected.

3.2.4 VOLATILE ORGANIC COMPOUNDS

As shown in Table 3.1.b, no elevated concentrations of VOCs were detected in any of the soils collected.

3.2.5 TOTAL PETROLEUM HYDROCARBONS

3.2.5.1 DIESEL-RANGE ORGANICS

As shown in Table 3.1.c, elevated concentrations of DRO were detected in the soils collected from SB08, SB09, and SB10. The concentrations of DRO ranged from 4,100 ppm – 7,900 ppm with the highest concentrations detected at SB08, which is located down-gradient of the waste vault located in Area 2 of the facility as shown on Figure 2.1. The concentrations of DRO detected in the area of the waste vault are likely due to the release of heavy petroleum products such as lubricants, oils, and hydraulic fluids.

3.2.5.2 GASOLINE-RANGE ORGANICS

As shown in Table 3.1.c, no elevated concentrations of GRO were detected in the soils collected.

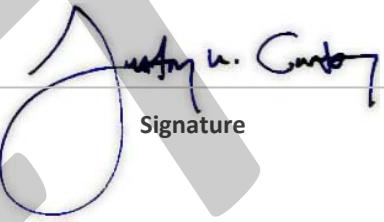
4.0 CONCLUSIONS

PMT has performed this Environmental Subsurface Assessment of the American Plating Services facility, located at 4004 E. Monument Street, Baltimore, Maryland 21205, in accordance with industry standard practices and under the supervision of the US EPA. This assessment has revealed evidence of elevated concentrations of arsenic, chromium, hexavalent chromium, and diesel-range organic compounds in the subsurface.

5.0 SIGNATURES OF PARTICIPATING PROFESSIONALS

Justin W. Custer, Vice President of Operations

Environmental Field Geologist / Reporter



Signature

Paul G. Thompson, President

Reviewed By



Signature

June 25, 2014

Date

FIGURES

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Figure 1.0. General Location Map

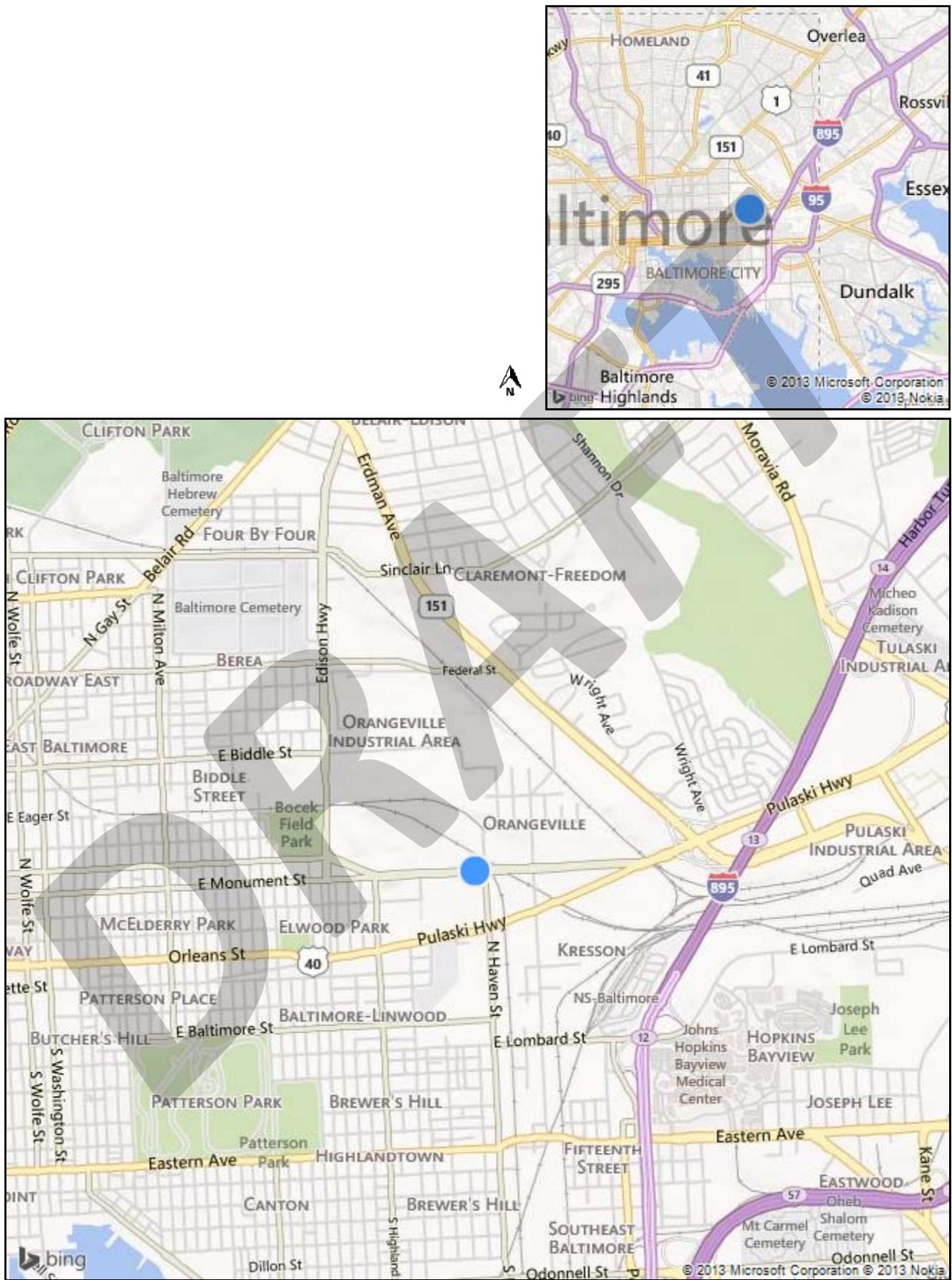
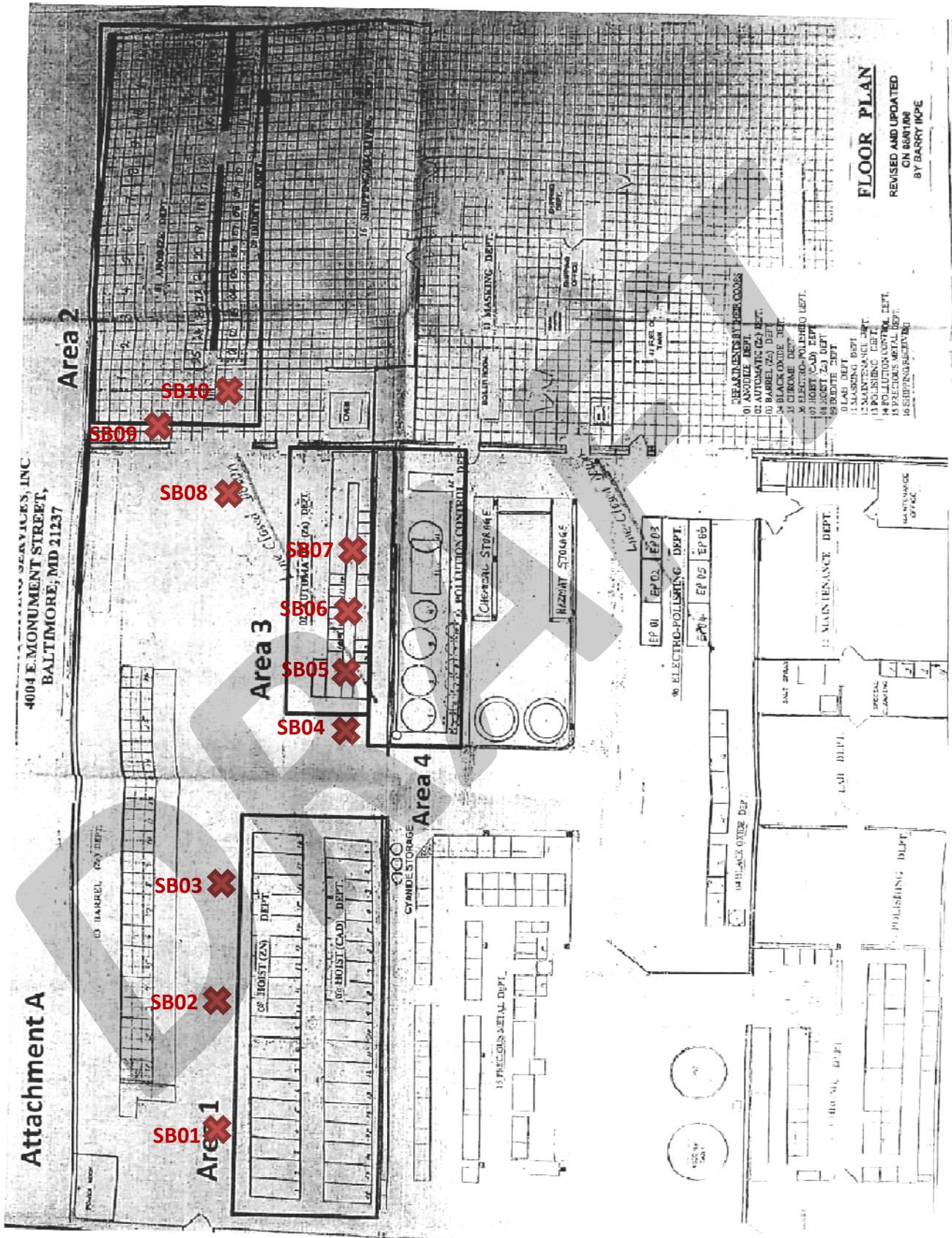


Figure 2.1. Approximate Soil Boring Locations completed on January 2, 2014, and January 4, 2014.



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Photo 1. SB01 selected drilling location (orange paint) in Area 1.



Photo 2. SB03 selected drilling location (orange paint) in Area 1.



Photo 3. SB01 selected drilling location (orange paint) in Area 1.



Photo 4. SB02 selected drilling location (orange paint) in Area 1.



Photo 5. SB07 selected drilling location (orange paint) in Area 3.



Photo 6. SB06 selected drilling location (orange paint) in Area 3.



Photo 7. An selected location in Area 3 that was not drilled.



Photo 8. SB05 selected drilling location (orange paint) in Area 3.



Photo 9. View of Area 2.



Photo 11. SB04 selected drilling location (orange paint) in Area 3.



Photo 10. Site preparation involved concrete coring prior to drilling.

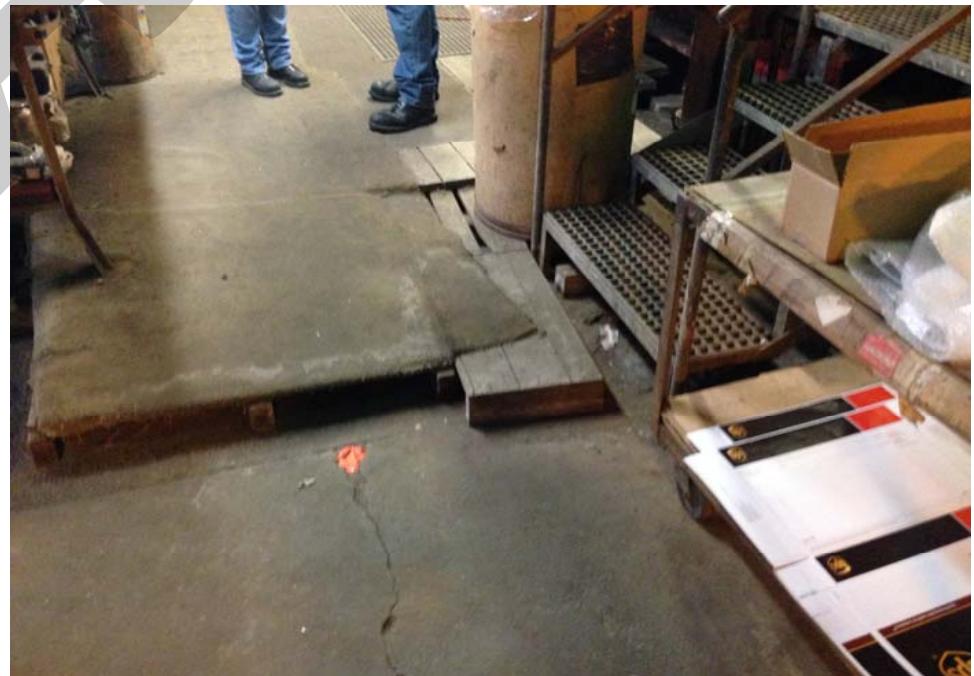


Photo 12. SB08 selected drilling location (orange paint) in Area 3.



Photo 13. View of Area 2 including the concrete vault receiving waste.

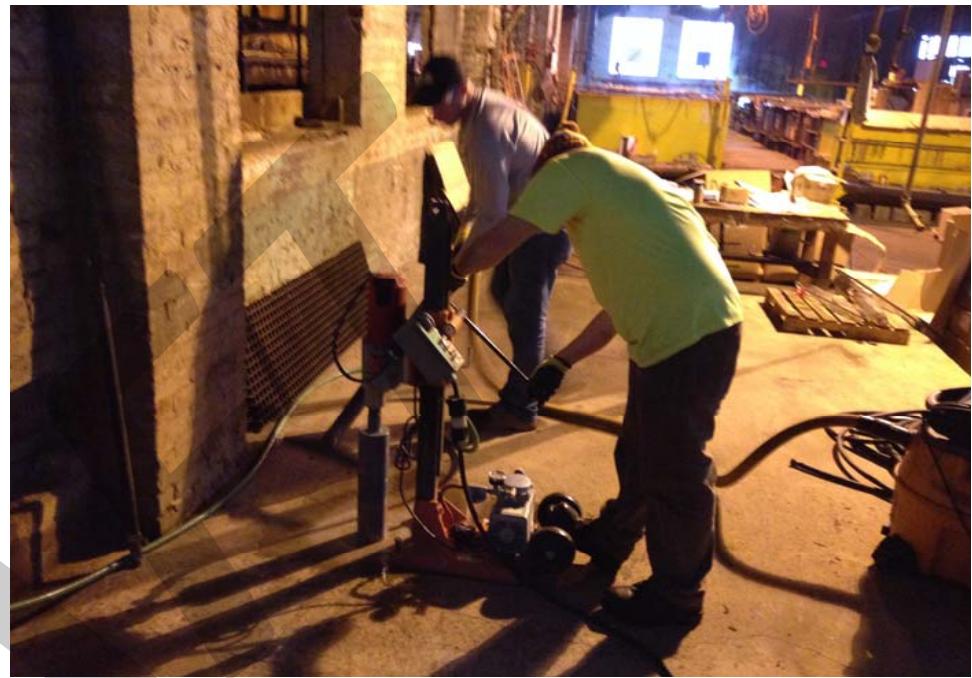


Photo 14. Concrete coring preparation at SB06.



Photo 15. Concrete core drilling.



Photo 16. Finished concrete coring at SB07.



Photo 17. Drilling operations at SB05.



Photo 19. View of concrete coring in Area 2.



Photo 18. U.S. EPA personnel screening soils using an XFR.

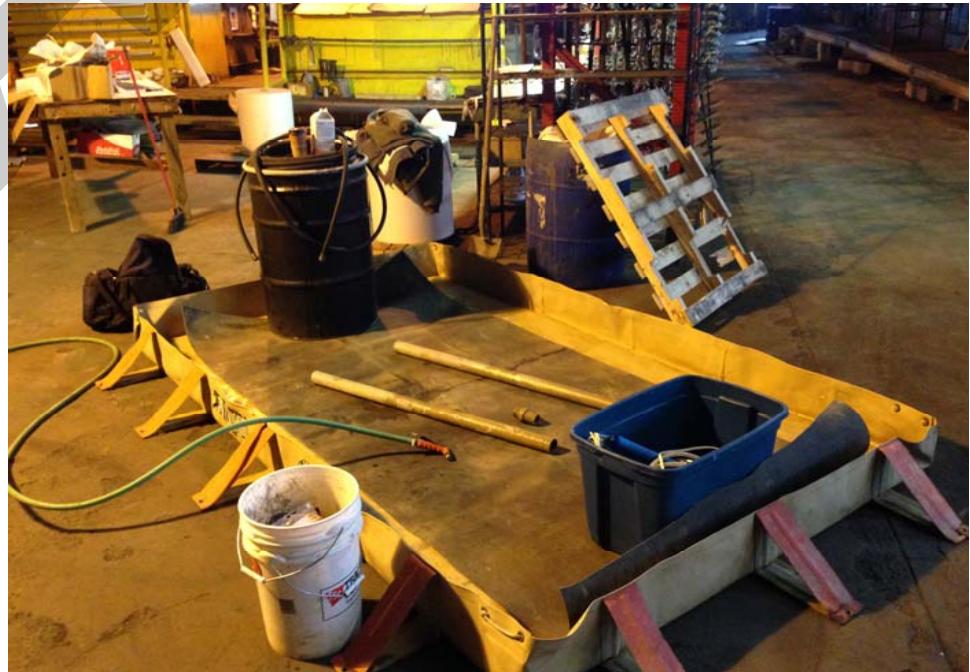


Photo 20. Decontamination station.

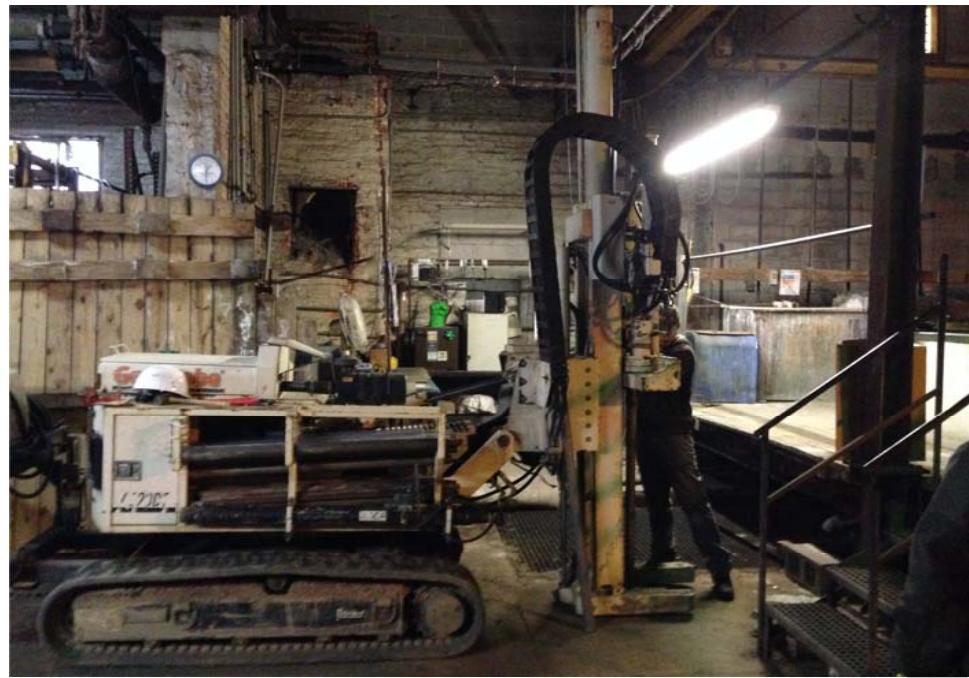


Photo 21. Drilling operations in Area 2.

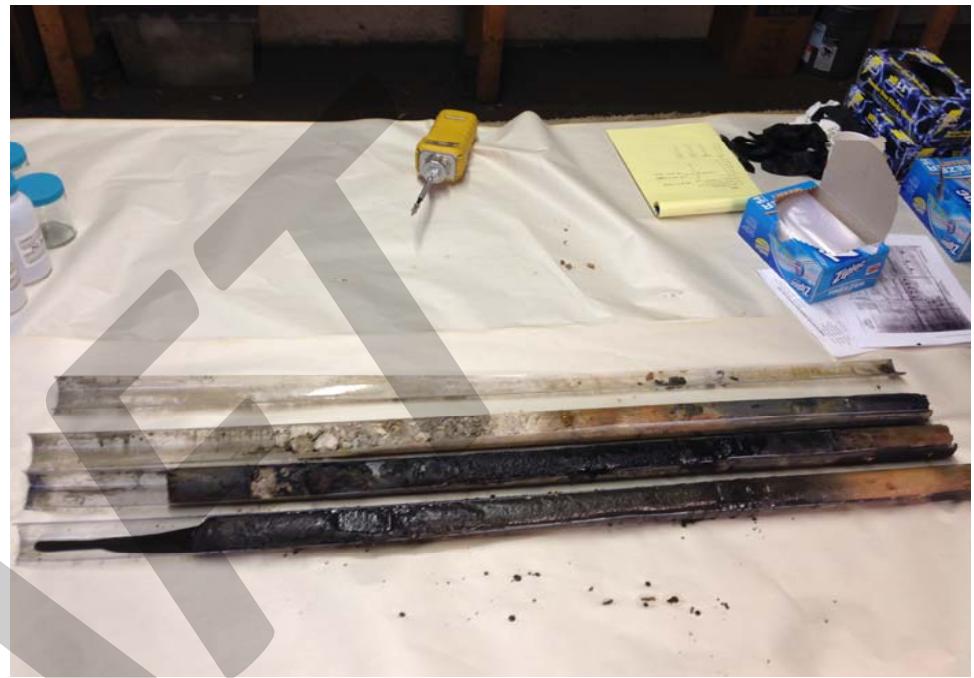


Photo 22. Visibly stained soils collected from Area 2.



Photo 23. Drilling operations in Area 3.



Photo 24. Drilling operations in Area 1.



Photo 25. Boring relocated due to refusal.



Photo 26. Drilling operations in Area 3.

DRAFT

MARTEL

American Plating Service, Inc
4004 East Monument Street

Friday, April 11, 2014

Baltimore, Maryland 21205

Attention: Abe Vizhansky

Report for Lab No: 12855, 12899.

Sampling by Martel.

P.O. Number: Prepaid/Check

Project Identification: Soil Samples - 1/2/14 & 1/4/14

Samples analyzed according to method requirements and QC exceptions available.

FINAL
Certificate of Analysis

CLIENT SAMPLE IDENTIFICATION					Sample Date/Time
MARTEL NO.		AP-010214-SB01A			01/02/2014 15:30
Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 11:59 CSG
Arsenic	3.8	mg/kg	EPA 6010C	1	01/10/2014 11:59 CSG
Barium	42	mg/kg	EPA 6010C	5	01/10/2014 11:59 CSG
Cadmium	4.9	mg/kg	EPA 6010C	1	01/10/2014 11:59 CSG
Chromium	85	mg/kg	EPA 6010C	1	01/10/2014 11:59 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/22/2014 12:09 ENK
Lead	<1	mg/kg	EPA 6010C	1	01/10/2014 11:59 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 11:59 CSG
Chromium (Hexavalent)	2.4	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	0.52	mg/kg	EPA 335.4	0.25	01/10/2014 17:00 CSG
Solids (Total)	86.3	%	SM 2540B		01/06/2014 14:20 BMC

CLIENT SAMPLE IDENTIFICATION					Sample Date/Time
MARTEL NO.		AP-010214-SB01B			01/02/2014 15:30
Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:04 CSG
Arsenic	4.4	mg/kg	EPA 6010C	1	01/10/2014 12:04 CSG
Barium	9.2	mg/kg	EPA 6010C	5	01/10/2014 12:04 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/10/2014 12:04 CSG
Chromium	160	mg/kg	EPA 6010C	1	01/10/2014 12:07 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/22/2014 12:09 ENK
Lead	3.7	mg/kg	EPA 6010C	1	01/10/2014 12:04 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:04 CSG
Chromium (Hexavalent)	6.3	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	1.0	mg/kg	EPA 335.4	0.25	01/10/2014 17:00 CSG
Solids (Total)	88.0	%	SM 2540B		01/06/2014 14:20 BMC

CLIENT SAMPLE IDENTIFICATION					Sample Date/Time
MARTEL NO.		AP-010214-SB02A			01/02/2014 15:00
Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial

Martel Laboratories JDS Inc.

A1PLAT

Page 1 OF 15

04/11/2014



Certificate of Analysis

MARTEL NO.

12855 000003

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB02A

Sample Date/Time
01/02/2014 15:00

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:14 CSG
Arsenic	20	mg/kg	EPA 6010C	1	01/10/2014 12:14 CSG
Barium	9.9	mg/kg	EPA 6010C	5	01/10/2014 12:14 CSG
Cadmium	15	mg/kg	EPA 6010C	1	01/10/2014 12:14 CSG
Chromium	1100	mg/kg	EPA 6010C	1	01/10/2014 12:14 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/10/2014 14:18 CSG
Lead	55	mg/kg	EPA 6010C	1	01/22/2014 12:09 ENK
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:14 CSG
Chromium (Hexavalent)	0.88	mg/kg	SM 3500-Cr B-09	0.4	01/10/2014 12:14 CSG
Cyanide (total)	460	mg/kg	EPA 335.4	0.25	01/09/2014 14:09 BMC
Solids (Total)	88.4	%	SM 2540B		01/10/2014 17:00 CSG
					01/06/2014 14:20 BMC

MARTEL NO.

12855 000004

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB02B

Sample Date/Time
01/02/2014 15:00

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:19 CSG
Arsenic	16	mg/kg	EPA 6010C	1	01/10/2014 12:19 CSG
Barium	9.9	mg/kg	EPA 6010C	5	01/10/2014 12:19 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/10/2014 12:19 CSG
Chromium	730	mg/kg	EPA 6010C	1	01/10/2014 14:21 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/22/2014 12:09 ENK
Lead	12	mg/kg	EPA 6010C	1	01/10/2014 12:19 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:19 CSG
Chromium (Hexavalent)	20	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	8.5	mg/kg	EPA 335.4	0.25	01/10/2014 17:00 CSG
Solids (Total)	88.3	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12855 000005

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB04A

Sample Date/Time
01/02/2014 14:55

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:24 CSG
Arsenic	2.3	mg/kg	EPA 6010C	1	01/10/2014 12:24 CSG
Barium	14	mg/kg	EPA 6010C	5	01/10/2014 12:24 CSG
Cadmium	3.7	mg/kg	EPA 6010C	1	01/10/2014 12:24 CSG
Chromium	37	mg/kg	EPA 6010C	1	01/10/2014 12:24 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/22/2014 12:09 ENK
Lead	3.0	mg/kg	EPA 6010C	1	01/10/2014 12:24 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:24 CSG
Chromium (Hexavalent)	<0.4	mg/kg	SM 3500-Cr B-09	0.4	01/27/2014 11:10 BMC
Cyanide (total)	11	mg/kg	EPA 335.4	0.25	01/13/2014 17:20 CSG
Solids (Total)	89.8	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12855 000006

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB04BSample Date/Time
01/02/2014 14:55

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:29 CSG
Arsenic	6.7	mg/kg	EPA 6010C	1	01/10/2014 12:29 CSG
Barium	8.5	mg/kg	EPA 6010C	5	01/10/2014 12:29 CSG
Cadmium	9.7	mg/kg	EPA 6010C	1	01/10/2014 12:29 CSG
Chromium	300	mg/kg	EPA 6010C	1	01/10/2014 12:29 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/22/2014 12:09 ENK
Lead	6.8	mg/kg	EPA 6010C	1	01/10/2014 12:29 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:29 CSG
Chromium (Hexavalent)	4.5	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	50	mg/kg	EPA 335.4	0.25	01/13/2014 17:20 CSG
Solids (Total)	87.3	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12855 000007

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB05ASample Date/Time
01/02/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:34 CSG
Arsenic	3.7	mg/kg	EPA 6010C	1	01/10/2014 12:34 CSG
Barium	31	mg/kg	EPA 6010C	5	01/10/2014 12:34 CSG
Cadmium	1.1	mg/kg	EPA 6010C	1	01/10/2014 12:34 CSG
Chromium	87	mg/kg	EPA 6010C	1	01/10/2014 12:34 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/24/2014 13:22 ENK
Lead	140	mg/kg	EPA 6010C	1	01/10/2014 12:37 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:34 CSG
Chromium (Hexavalent)	<0.4	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	310	mg/kg	EPA 335.4	0.25	01/13/2014 17:20 CSG
Solids (Total)	90.1	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12855 000008

AP-010214-SB05B

Sample Date/Time
01/02/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:44 CSG
Arsenic	5.5	mg/kg	EPA 6010C	1	01/10/2014 12:44 CSG
Barium	6.4	mg/kg	EPA 6010C	5	01/10/2014 12:44 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/10/2014 12:44 CSG
Chromium	220	mg/kg	EPA 6010C	1	01/10/2014 12:46 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/24/2014 13:22 ENK
Lead	1.8	mg/kg	EPA 6010C	1	01/10/2014 12:44 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:44 CSG
Chromium (Hexavalent)	<0.4	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	63	mg/kg	EPA 335.4	0.25	01/13/2014 17:20 CSG
Solids (Total)	95.0	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12855 000009

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB06ASample Date/Time
01/02/2014 11:10

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:49 CSG
Arsenic	2.5	mg/kg	EPA 6010C	1	01/10/2014 12:49 CSG
Barium	7.4	mg/kg	EPA 6010C	5	01/10/2014 12:49 CSG
Cadmium	6.3	mg/kg	EPA 6010C	1	01/10/2014 12:49 CSG
Chromium	120	mg/kg	EPA 6010C	1	01/10/2014 12:49 CSG
Mercury	0.097	mg/kg	EPA 7471	0.083	01/24/2014 13:22 ENK
Lead	20	mg/kg	EPA 6010C	1	01/10/2014 12:49 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:49 CSG
Chromium (Hexavalent)	<0.4	mg/kg	SM 3500-Cr B-09	0.4	01/10/2014 12:49 CSG
Cyanide (total)	0.43	mg/kg	EPA 335.4	0.25	01/09/2014 14:09 BMC
Solids (Total)	87.8	%	SM 2540B		01/13/2014 17:20 CSG
					01/06/2014 14:20 BMC

MARTEL NO.

12855 000010

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB06BSample Date/Time
01/02/2014 11:10

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 12:54 CSG
Arsenic	1.9	mg/kg	EPA 6010C	1	01/10/2014 12:54 CSG
Barium	6.0	mg/kg	EPA 6010C	5	01/10/2014 12:54 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/10/2014 12:54 CSG
Chromium	75	mg/kg	EPA 6010C	1	01/10/2014 12:54 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/24/2014 13:22 ENK
Lead	7.7	mg/kg	EPA 6010C	1	01/10/2014 12:54 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 12:54 CSG
Chromium (Hexavalent)	0.80	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	9.2	mg/kg	EPA 335.4	0.25	01/15/2014 16:45 CSG
Solids (Total)	88.2	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12855 000011

AP-010214-SB07A

Sample Date/Time
01/02/2014 11:45

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 13:01 CSG
Arsenic	2.8	mg/kg	EPA 6010C	1	01/10/2014 13:01 CSG
Barium	19	mg/kg	EPA 6010C	5	01/10/2014 13:01 CSG
Cadmium	17	mg/kg	EPA 6010C	1	01/10/2014 13:01 CSG
Chromium	58	mg/kg	EPA 6010C	1	01/10/2014 13:01 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/24/2014 13:22 ENK
Lead	6.7	mg/kg	EPA 6010C	1	01/10/2014 13:01 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 13:01 CSG
Chromium (Hexavalent)	<0.4	mg/kg	SM 3500-Cr B-09	0.4	01/09/2014 14:09 BMC
Cyanide (total)	640	mg/kg	EPA 335.4	0.25	01/15/2014 16:45 CSG
Solids (Total)	88.8	%	SM 2540B		01/06/2014 14:20 BMC

Certificate of Analysis

MARTEL NO.

12855 000012

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB07BSample Date/Time
01/02/2014 11:45

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 13:07 CSG
Arsenic	4.8	mg/kg	EPA 6010C	1	01/10/2014 13:07 CSG
Barium	8.9	mg/kg	EPA 6010C	5	01/10/2014 13:07 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/10/2014 13:07 CSG
Chromium	130	mg/kg	EPA 6010C	1	01/10/2014 13:07 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/10/2014 13:13 CSG
Lead	2.1	mg/kg	EPA 6010C	1	01/24/2014 13:22 ENK
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 13:07 CSG
Chromium (Hexavalent)	25	mg/kg	SM 3500-Cr B-09	0.4	01/10/2014 13:07 CSG
Cyanide (total)	12	mg/kg	EPA 335.4	0.25	01/09/2014 14:09 BMC
Solids (Total)	89.2	%	SM 2540B		01/15/2014 16:45 CSG
					01/06/2014 14:20 BMC

MARTEL NO.

12855 000013

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB09ASample Date/Time
01/02/2014 13:20

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 13:16 CSG
Arsenic	2.0	mg/kg	EPA 6010C	1	01/10/2014 13:16 CSG
Barium	22	mg/kg	EPA 6010C	5	01/10/2014 13:16 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/10/2014 13:16 CSG
Chromium	22	mg/kg	EPA 6010C	1	01/10/2014 13:16 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/10/2014 13:16 CSG
Lead	<1	mg/kg	EPA 6010C	1	01/24/2014 13:22 ENK
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 13:16 CSG
Chromium (Hexavalent)	0.64	mg/kg	SM 3500-Cr B-09	0.4	01/10/2014 13:16 CSG
Cyanide (total)	<0.25	mg/kg	EPA 335.4	0.25	01/09/2014 14:09 BMC
Solids (Total)	86.7	%	SM 2540B		01/16/2014 15:00 CSG
					01/06/2014 14:20 BMC

MARTEL NO.

12855

000014

AP-010214-SB09B

Sample Date/Time
01/02/2014 13:20

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/10/2014 13:21 CSG
Arsenic	1.8	mg/kg	EPA 6010C	1	01/10/2014 13:21 CSG
Barium	6.7	mg/kg	EPA 6010C	5	01/10/2014 13:21 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/10/2014 13:21 CSG
Chromium	14	mg/kg	EPA 6010C	1	01/10/2014 13:21 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/10/2014 13:21 CSG
Lead	<1	mg/kg	EPA 6010C	1	01/24/2014 13:22 ENK
Selenium	<2	mg/kg	EPA 6010C	2	01/10/2014 13:21 CSG
Chromium (Hexavalent)	<0.4	mg/kg	SM 3500-Cr B-09	0.4	01/10/2014 13:21 CSG
Cyanide (total)	<0.25	mg/kg	EPA 335.4	0.25	01/09/2014 14:09 BMC
Solids (Total)	84.9	%	SM 2540B		01/16/2014 15:00 CSG
					01/06/2014 14:20 BMC

MARTEL NO.

12855 000015

AP-010214-SB09C

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/02/2014 13:20

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Diesel Range Organics	4100	mg/kg	EPA 8015B	1000	02/03/2014 17:26 CJD
Extraction for diesel fuel only	X	DR011614S	EPA 8015B		01/16/2014 17:30 CJD
Gasoline Range Organics	53	mg/kg	EPA 8015B	5	01/17/2014 21:16 CJD
Volatile Organic Compounds			EPA 8260B		01/16/2014 17:14 CJD
Acetone	0.23	mg/kg	EPA 8260	0.1	01/16/2014 17:14 CJD
Benzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Bromochloromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Bromodichloromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Bromoform	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Bromomethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
2-Butanone	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Carbon disulfide	ND	mg/kg	EPA 8260	0.1	01/16/2014 17:14 CJD
Carbon tetrachloride	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Chlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Chloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Chloroform	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Chloromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
cis-1,2-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
cis-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Cyclohexane	0.06	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,2-Dibromo-3-chloropropane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Dibromochloromethane	ND	mg/kg	EPA 8260	0.1	01/16/2014 17:14 CJD
1,2-Dibromoethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,2-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,3-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,4-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Dichlorodifluoromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,1-Dichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,2-Dichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,1-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Dichloromethane	0.084	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,2-Dichloropropane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Ethylbenzene	0.63	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
2-Hexanone	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Isopropylbenzene	0.808	mg/kg	EPA 8260	0.1	01/16/2014 17:14 CJD
Methyl Acetate	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
4-Methyl-2-pentanone	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Methyl-t-butyl ether	ND	mg/kg	EPA 8260	0.1	01/16/2014 17:14 CJD
Methylcyclohexane	0.51	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Styrene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,1,1,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,1,2,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Tetrachloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Toluene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
trans-1,2-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
				0.05	01/16/2014 17:14 CJD



Certificate of Analysis

MARTEL NO.

12855 000015

CLIENT SAMPLE IDENTIFICATION
AP-010214-SB09C

Sample Date/Time
01/02/2014 13:20

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
trans-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,2,3-Trichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,2,4-Trichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,1,1-Trichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
1,1,2-Trichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Trichloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Trichlorofluoromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Vinyl chloride	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Xylene, Total	ND	mg/kg	EPA 8260	0.05	01/16/2014 17:14 CJD
Surrogate Spike					/ /
4-Bromofluorobenzene	440	%	EPA 8260		/ /
Dibromofluoromethane	93	%	EPA 8260		01/16/2014 17:14 CJD
Toluene-d8	115	%	EPA 8260		01/16/2014 17:14 CJD
					01/16/2014 17:14 CJD

MARTEL NO.

12855 000016

CLIENT SAMPLE IDENTIFICATION
AP-010214-FB

Sample Date/Time
01/02/2014 00:00

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Cyanide (total)	<0.005	mg/l	EPA 335.4	0.005	01/07/2014 17:15 CSG

MARTEL NO.

12855 000017

CLIENT SAMPLE IDENTIFICATION
AP-010214-RB

Sample Date/Time
01/02/2014 00:00

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Cyanide (total)	<0.005	mg/l	EPA 335.4	0.005	01/07/2014 17:15 CSG

MARTEL NO.

12855 000018

PMT Trip Blank

Sample Date/Time
01/02/2014 00:00

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<0.002	mg/l	EPA 6020	0.002	01/13/2014 15:24 CSG
Arsenic	<0.002	mg/l	EPA 6020	0.002	01/13/2014 15:24 CSG
Barium	<0.005	mg/l	EPA 6020	0.005	01/13/2014 15:24 CSG
Cadmium	<0.002	mg/l	EPA 6020	0.002	01/13/2014 15:24 CSG
Chromium	<0.002	mg/l	EPA 6020	0.002	01/13/2014 15:24 CSG
Mercury	<0.0005	mg/l	EPA 7471	0.0005	01/13/2014 15:24 CSG
Lead	<0.002	mg/l	EPA 6020	0.002	01/07/2014 13:01 ENK
Selenium	<0.005	mg/l	EPA 6020	0.005	01/13/2014 15:24 CSG
Cyanide (total)	<0.005	mg/l	EPA 335.4	0.005	01/07/2014 17:15 CSG

MARTEL NO.

12899 000001

CLIENT SAMPLE IDENTIFICATION
AP-010414-SB03A

Sample Date/Time
01/04/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial

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04/11/2014

MARTEL NO.

12899

000001

AP-010414-SB03A

CLIENT SAMPLE IDENTIFICATION
Sample Date/Time
 01/04/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/30/2014 11:52 CSG
Arsenic	4.6	mg/kg	EPA 6010C	1	01/30/2014 11:52 CSG
Barium	32	mg/kg	EPA 6010C	5	01/30/2014 11:52 CSG
Cadmium	2.8	mg/kg	EPA 6010C	1	01/30/2014 11:52 CSG
Chromium	110	mg/kg	EPA 6010C	1	01/30/2014 11:52 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/29/2014 12:56 ENK
Lead	11	mg/kg	EPA 6010C	1	01/30/2014 11:52 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/30/2014 11:52 CSG
Chromium (Hexavalent)	1.1	mg/kg	SM 3500-Cr B-09	0.4	01/27/2014 11:10 BMC
Cyanide (total)	31	mg/kg	EPA 335.4	0.25	01/16/2014 15:00 CSG
Solids (Total)	89.6	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12899

000002

AP-010414-SB03B

CLIENT SAMPLE IDENTIFICATION
Sample Date/Time
 01/04/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/30/2014 12:01 CSG
Arsenic	1.6	mg/kg	EPA 6010C	1	01/30/2014 12:01 CSG
Barium	<5	mg/kg	EPA 6010C	5	01/30/2014 12:01 CSG
Cadmium	5.0	mg/kg	EPA 6010C	1	01/30/2014 12:01 CSG
Chromium	15	mg/kg	EPA 6010C	1	01/30/2014 12:01 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/29/2014 12:56 ENK
Lead	3.5	mg/kg	EPA 6010C	1	01/30/2014 12:01 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/30/2014 12:01 CSG
Chromium (Hexavalent)	0.6	mg/kg	SM 3500-Cr B-09	0.4	01/27/2014 11:10 BMC
Cyanide (total)	<0.25	mg/kg	EPA 335.4	0.25	01/17/2014 16:00 CSG
Solids (Total)	85.0	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12899

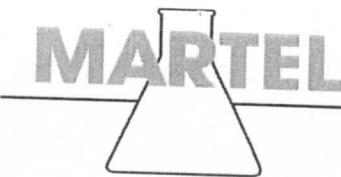
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AP-010414-SB03C

CLIENT SAMPLE IDENTIFICATION
Sample Date/Time
 01/04/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Volatile Organic Compounds			EPA 8260B		
Acetone	0.027	mg/kg	EPA 8260	0.01	01/16/2014 19:20 CJD
Benzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Bromochloromethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Bromodichloromethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Bromoform	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Bromomethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
2-Butanone	ND	mg/kg	EPA 8260	0.01	01/16/2014 19:20 CJD
Carbon disulfide	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Carbon tetrachloride	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Chlorobenzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Chloroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Chloroform	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Chloromethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD

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Certificate of Analysis

MARTEL NO.

12899 000003

AP-010414-SB03C

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
cis-1,2-Dichloroethene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
cis-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Cyclohexane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,2-Dibromo-3-chloropropane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Dibromochloromethane	ND	mg/kg	EPA 8260	0.01	01/16/2014 19:20 CJD
1,2-Dibromoethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,2-Dichlorobenzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,3-Dichlorobenzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,4-Dichlorobenzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Dichlorodifluoromethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,1-Dichloroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,2-Dichloroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,1-Dichloroethene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Dichloromethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,2-Dichloropropane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Ethylbenzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
2-Hexanone	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Isopropylbenzene	ND	mg/kg	EPA 8260	0.01	01/16/2014 19:20 CJD
Methyl Acetate	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
4-Methyl-2-pentanone	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Methyl-t-butyl ether	ND	mg/kg	EPA 8260	0.01	01/16/2014 19:20 CJD
Methylcyclohexane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Styrene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,1,1,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,1,2,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Tetrachloroethylene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Toluene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
trans-1,2-Dichloroethene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
trans-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,2,3-Trichlorobenzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,2,4-Trichlorobenzene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,1,1-Trichloroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
1,1,2-Trichloroethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Trichloroethylene	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Trichlorofluoromethane	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Vinyl chloride	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Xylene, Total	ND	mg/kg	EPA 8260	0.005	01/16/2014 19:20 CJD
Surrogate Spike					//
4-Bromofluorobenzene	107	%	EPA 8260		//
Dibromofluoromethane	98	%	EPA 8260		01/16/2014 19:20 CJD
Toluene-d8	100	%	EPA 8260		01/16/2014 19:20 CJD
Diesel Range Organics	10	mg/kg	EPA 8015B	10	02/02/2014 20:06 CJD

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MARTEL NO.

12899

000003

AP-010414-SB03C

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 10:35

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Extraction for diesel fuel only	X	DR011614S	EPA 8015B		
Gasoline Range Organics	ND	mg/kg	EPA 8015B	0.01	01/16/2014 17:30 CJD
Solids (Total)	85.5	%	SM 2540B		01/10/2014 16:14 CJD 01/09/2014 15:15 BMC

MARTEL NO.

12899

000004

AP-010414-SB08A

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 12:30

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/30/2014 12:06 CSG
Arsenic	4.7	mg/kg	EPA 6010C	1	01/30/2014 12:06 CSG
Barium	28	mg/kg	EPA 6010C	5	01/30/2014 12:06 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/30/2014 12:06 CSG
Chromium	35	mg/kg	EPA 6010C	1	01/30/2014 12:06 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/30/2014 12:06 CSG
Lead	5.5	mg/kg	EPA 6010C	1	01/29/2014 12:56 ENK
Selenium	<2	mg/kg	EPA 6010C	2	01/30/2014 12:06 CSG
Chromium (Hexavalent)	1.2	mg/kg	SM 3500-Cr B-09	0.4	01/30/2014 12:06 CSG
Cyanide (total)	4.4	mg/kg	SM 3500-Cr B-09	0.25	01/27/2014 11:10 BMC
Solids (Total)	81.4	%	SM 2540B		01/17/2014 16:00 CSG 01/06/2014 14:20 BMC

MARTEL NO.

12899

000005

AP-010414-SB08B

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 12:30

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/30/2014 12:12 CSG
Arsenic	6.3	mg/kg	EPA 6010C	1	01/30/2014 12:12 CSG
Barium	8.9	mg/kg	EPA 6010C	5	01/30/2014 12:12 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/30/2014 12:12 CSG
Chromium	260	mg/kg	EPA 6010C	1	01/30/2014 12:14 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/29/2014 12:56 ENK
Lead	2.0	mg/kg	EPA 6010C	1	01/30/2014 12:12 CSG
Selenium	<2	mg/kg	EPA 6010C	2	01/30/2014 12:12 CSG
Chromium (Hexavalent)	1.5	mg/kg	SM 3500-Cr B-09	0.4	01/27/2014 11:10 BMC
Cyanide (total)	2.4	mg/kg	EPA 335.4	0.25	01/17/2014 16:00 CSG
Solids (Total)	86.9	%	SM 2540B		01/06/2014 14:20 BMC

MARTEL NO.

12899

000006

AP-010414-SB08C

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 12:30

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Volatile Organic Compounds			EPA 8260B		
Acetone	0.38	mg/kg	EPA 8260	0.1	01/16/2014 22:49 CJD
Benzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Bromochloromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Bromodichloromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Bromoform	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD

MARTEL NO.

12899

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AP-010414-SB08C

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 12:30

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Bromomethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
2-Butanone	ND	mg/kg	EPA 8260	0.1	01/16/2014 22:49 CJD
Carbon disulfide	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Carbon tetrachloride	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Chlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Chloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Chloroform	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Chloromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
cis-1,2-Dichloroethylene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
cis-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Cyclohexane	1.2	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,2-Dibromo-3-chloropropane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Dibromochloromethane	ND	mg/kg	EPA 8260	0.1	01/16/2014 22:49 CJD
1,2-Dibromoethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,2-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,3-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,4-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Dichlorodifluoromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,1-Dichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,2-Dichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,1-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Dichloromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,2-Dichloropropane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Ethylbenzene	1.3	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
2-Hexanone	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Isopropylbenzene	1.6	mg/kg	EPA 8260	0.1	01/16/2014 22:49 CJD
Methyl Acetate	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
4-Methyl-2-pentanone	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Methyl-t-butyl ether	ND	mg/kg	EPA 8260	0.1	01/16/2014 22:49 CJD
Methylcyclohexane	3	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Styrene	ND	mg/kg	EPA 8260	0.25	01/17/2014 19:55 CJD
1,1,1,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,1,2,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Tetrachloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Toluene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
trans-1,2-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
trans-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,2,3-Trichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,2,4-Trichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,1,1-Trichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
1,1,2-Trichloroethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Trichloroethene	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Trichlorofluoromethane	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Vinyl chloride	ND	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
				0.05	01/16/2014 22:49 CJD

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MARTEL NO.

12899 000006

AP-010414-SB08C

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 12:30

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Xylene, Total	0.89	mg/kg	EPA 8260	0.05	01/16/2014 22:49 CJD
Surrogate Spike					/ /
4-Bromofluorobenzene	1146	%	EPA 8260		/ /
Dibromofluoromethane	91	%	EPA 8260		01/16/2014 22:49 CJD
Toluene-d8	106	%	EPA 8260		01/16/2014 22:49 CJD
Diesel Range Organics	7900	mg/kg	EPA 8015B		/ /
Extraction for diesel fuel only	X	DR011614S	EPA 8015B	1000	02/03/2014 16:50 CJD
Gasoline Range Organics	94	mg/kg	EPA 8015B		01/16/2014 17:30 CJD
Solids (Total)	87.2	%	SM 2540B	5	01/17/2014 22:25 CJD
					01/09/2014 15:15 BMC

MARTEL NO.

12899 000007

AP-010414-SB10A

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 11:10

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/30/2014 12:17 CSG
Arsenic	1.9	mg/kg	EPA 6010C	1	01/30/2014 12:17 CSG
Barium	21	mg/kg	EPA 6010C	5	01/30/2014 12:17 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/30/2014 12:17 CSG
Chromium	18	mg/kg	EPA 6010C	1	01/30/2014 12:17 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/30/2014 12:17 CSG
Lead	<1	mg/kg	EPA 6010C	1	01/29/2014 12:56 ENK
Selenium	<2	mg/kg	EPA 6010C	2	01/30/2014 12:17 CSG
Chromium (Hexavalent)	<0.4	mg/kg	SM 3500-Cr B-09	0.4	01/30/2014 12:17 CSG
Cyanide (total)	<0.25	mg/kg	EPA 335.4	0.25	01/27/2014 11:10 BMC
Solids (Total)	84.7	%	SM 2540B		01/17/2014 16:00 CSG
					01/06/2014 14:20 BMC

MARTEL NO.

12899

000008

AP-010414-SB10B

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 11:10

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<2	mg/kg	EPA 6010C	2	01/30/2014 12:22 CSG
Arsenic	7.2	mg/kg	EPA 6010C	1	01/30/2014 12:22 CSG
Barium	14	mg/kg	EPA 6010C	5	01/30/2014 12:22 CSG
Cadmium	<1	mg/kg	EPA 6010C	1	01/30/2014 12:22 CSG
Chromium	28	mg/kg	EPA 6010C	1	01/30/2014 12:22 CSG
Mercury	<0.083	mg/kg	EPA 7471	0.083	01/30/2014 12:22 CSG
Lead	3.2	mg/kg	EPA 6010C	1	01/29/2014 12:56 ENK
Selenium	<2	mg/kg	EPA 6010C	2	01/30/2014 12:22 CSG
Chromium (Hexavalent)	1.5	mg/kg	SM 3500-Cr B-09	0.4	01/30/2014 12:22 CSG
Cyanide (total)	1.2	mg/kg	EPA 335.4	0.25	01/27/2014 11:10 BMC
Solids (Total)	88.9	%	SM 2540B		01/17/2014 16:00 CSG
					01/06/2014 14:20 BMC



Certificate of Analysis

MARTEL NO.

12899 000009

AP-010414-SB10C

CLIENT SAMPLE IDENTIFICATION

Sample Date/Time
01/04/2014 11:10

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Volatile Organic Compounds					
Acetone	0.17	mg/kg	EPA 8260B		01/17/2014 00:55 CJD
Benzene	ND	mg/kg	EPA 8260	0.1	01/17/2014 00:55 CJD
Bromochloromethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Bromodichloromethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Bromoform	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Bromomethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
2-Butanone	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Carbon disulfide	ND	mg/kg	EPA 8260	0.1	01/17/2014 00:55 CJD
Carbon tetrachloride	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Chlorobenzene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Chloroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Chloroform	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Chloromethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
cis-1,2-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
cis-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Cyclohexane	0.94	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,2-Dibromo-3-chloropropane	ND	mg/kg	EPA 8260	0.1	01/17/2014 00:55 CJD
Dibromochloromethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,2-Dibromoethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,2-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,3-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,4-Dichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Dichlorodifluoromethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,1-Dichloroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,2-Dichloroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,1-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Dichloromethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,2-Dichloropropane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Ethylbenzene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
2-Hexanone	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Isopropylbenzene	0.33	mg/kg	EPA 8260	0.1	01/17/2014 00:55 CJD
Methyl Acetate	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
4-Methyl-2-pentanone	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Methyl-t-butyl ether	ND	mg/kg	EPA 8260	0.1	01/17/2014 00:55 CJD
Methylcyclohexane	9.6	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Styrene	ND	mg/kg	EPA 8260	0.25	01/17/2014 22:01 CJD
1,1,1,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,1,2,2-Tetrachloroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Tetrachloroethene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Toluene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
trans-1,2-Dichloroethene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
trans-1,3-Dichloropropene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,2,3-Trichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
				0.05	01/17/2014 00:55 CJD

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04/11/2014

Questions, comments or concerns? Contact your Martel
representative or email martel@martellabs.com

MARTEL NO.

12899 000009

CLIENT SAMPLE IDENTIFICATION

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
1,2,4-Trichlorobenzene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,1,1-Trichloroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
1,1,2-Trichloroethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Trichloroethene	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Trichlorofluoromethane	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Vinyl chloride	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Xylene, Total	ND	mg/kg	EPA 8260	0.05	01/17/2014 00:55 CJD
Surrogate Spike					/ /
4-Bromofluorobenzene	465	%	EPA 8260		/ /
Dibromofluoromethane	92	%	EPA 8260		01/17/2014 00:55 CJD
Toluene-d8	102	%	EPA 8260		01/17/2014 00:55 CJD
Diesel Range Organics	5400	mg/kg	EPA 8015B	1000	02/03/2014 16:14 CJD
Extraction for diesel fuel only	X	DR011614S	EPA 8015B		01/16/2014 17:30 CJD
Gasoline Range Organics	94	mg/kg	EPA 8015B	5	01/18/2014 00:11 CJD
Solids (Total)	85.2	%	SM 2540B		01/09/2014 15:15 BMC

MARTEL NO.

12899 000010

CLIENT SAMPLE IDENTIFICATION

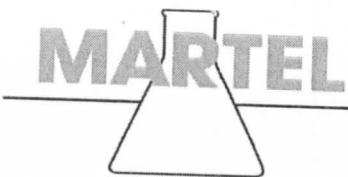
Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:25 CSG
Arsenic	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:25 CSG
Barium	<0.05	mg/l	EPA 6010C	0.05	01/22/2014 12:25 CSG
Cadmium	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:25 CSG
Chromium	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:25 CSG
Mercury	<0.0005	mg/l	EPA 7471	0.0005	02/05/2014 12:22 ENK
Lead	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:25 CSG
Selenium	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:25 CSG
Cyanide (total)	0.039	mg/l	EPA 335.4	0.005	01/13/2014 17:20 CSG

MARTEL NO.

12899 000011

CLIENT SAMPLE IDENTIFICATION

Compound	Test Value	Test Unit	Method	Detection Limit	Analysis Date/Time/Initial
Silver	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:30 CSG
Arsenic	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:30 CSG
Barium	<0.05	mg/l	EPA 6010C	0.05	01/22/2014 12:30 CSG
Cadmium	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:30 CSG
Chromium	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:30 CSG
Mercury	<0.0005	mg/l	EPA 7471	0.0005	01/22/2014 12:30 CSG
Lead	<0.02	mg/l	EPA 6010C	0.02	02/05/2014 12:22 ENK
Selenium	<0.02	mg/l	EPA 6010C	0.02	01/22/2014 12:30 CSG
Cyanide (total)	<0.005	mg/l	EPA 335.4	0.005	01/13/2014 17:20 CSG



Certificate of Analysis

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APR11G0

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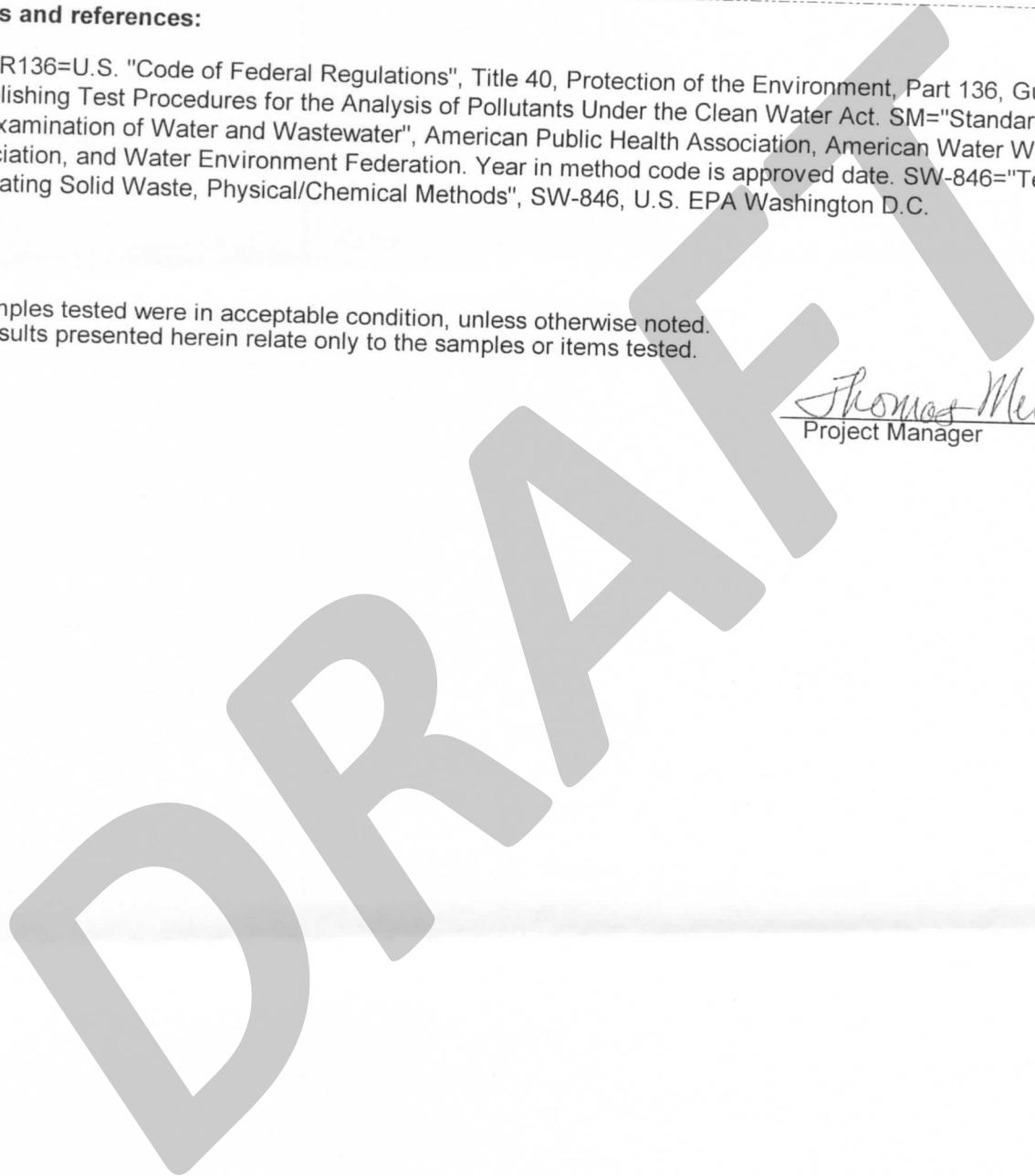
04/11/2014

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Notes and references:

40CFR136=U.S. "Code of Federal Regulations", Title 40, Protection of the Environment, Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act. SM="Standard Methods for the Examination of Water and Wastewater", American Public Health Association, American Water Works Association, and Water Environment Federation. Year in method code is approved date. SW-846="Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, U.S. EPA Washington D.C.

All samples tested were in acceptable condition, unless otherwise noted.
The results presented herein relate only to the samples or items tested.


Thomas Meashiff
Project Manager

MARTEL CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

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二十九

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MARTEL Log # 12855 1/2 Client Code							Client Name/Phone/FAX Print & Faxes Inc. 410-635-3512			Client Address 1425 Union Avenue, Baltimore, MD 21211		Invoice Address	
Sampler Jishan Wu (MSH)							Project Name/# American Plating			Contract/P.O. Number		Sample Turnaround Time 24 hours	
Station No./ Sample ID	Station Location	Matrix	Container Description	Potentially Hazardous?	# of Containers	Date	Time	Analyses Required/Comments					
1	AF-010214-SE01A	50:1	402 glass/None	na	1	01/02/2014	1530	RCRA 8 metals, Cr-II, Chars					
2	AF-010214-SE01B	50:1			1		1530	RCRA 8 metals, Cr-II, Chars					
3	AF-010214-SE02A	50:1			1		1520	RCRA 8 metals, Cr-III, Chars					
4	AF-010214-SE02B	50:1			1		1520	RCRA 8 metals, Cr-III, Chars					
5	AF-010214-SE04A	50:1			1		1435	RCRA 8 metals, Cr-IV, Chars					
6	AF-010214-SE04B	50:1			1		1435	RCRA 8 metals, Cr-IV, Chars					
7	AF-010214-SE05A	50:1			1		1435	RCRA 8 metals, Cr-IV, Chars					
8	AF-010214-SE05B	50:1			1		1035	RCRA 8 metals, Cr-IV, Chars					
9	AF-010214-SE06A	50:1			1		1035	RCRA 8 metals, Cr-IV, Chars					
10	AF-010214-SE06B	50:1			1		1110	RCRA 8 metals, Cr-IV, Chars					
11	AF-010214-SE07A	50:1			1		1110	RCRA 8 metals, Cr-IV, Chars					
12	AF-010214-SE07B	50:1			1		1115	RCRA 8 metals, Cr-IV, Chars					
13	AF-010214-SE07C	50:1			1		1115	RCRA 8 metals, Cr-IV, Chars					
Transferred by <i>John</i>							Received by: <i>John</i>			Customer Seal present intact? - Yes/No <input checked="" type="checkbox"/> If No, explain _____			
Transferred by <i>John</i>							Received by: <i>John</i>			Initials: <i>km</i> Date: <i>1/2/14</i>			

WATER CHAIN OF CUSTODY / RELEASE INFORMATION FORM

(-)

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Material Leadership Solutions Inc. • 1025 Cromwell Bridge Road • Baltimore, MD 21286 • (410) 825-7790 • FAX (410) 821-1054

DE CULTIVATION DE LA BANANE

Journal of Health Politics, Policy and Law, Vol. 35, No. 4, December 2010
DOI 10.1215/03616878-35-4 © 2010 by The University of Chicago



American Plating Service, Inc
4004 East Monument Street

Friday, April 11, 2014

Baltimore, Maryland 21205

Report for Lab No: 12855, 12899.

Sampling by Martel.

P.O. Number: Prepaid/Check

Project Identification: Soil Samples - 1/2/14 & 1/4/14

Narrative Report

- | | | | | |
|---|--|--------|-----------------|-------------------------|
| X | 12855 | 000015 | AP-010214-SB09C | 4-Bromofluorobenzene |
| | X - Surrogate recovery above QC limits. | | | |
| X | 12899 | 000006 | AP-010414-SB08C | 4-Bromofluorobenzene |
| | X - Surrogate recovery outside of QC limits. | | | |
| X | 12899 | 000009 | AP-010414-SB10C | 4-Bromofluorobenzene |
| | X - Surrogate recovery outside of QC limits. | | | |
| X | 12855 | 000015 | AP-010214-SB09C | Gasoline Range Organics |
| | X - Sample analyzed outside of holding time. | | | |
| X | 12855 | 000005 | AP-010214-SB04A | Cyanide (total) |
| | Sample is biased high due to quality control standard recoveries above the acceptable limit. | | | |
| X | 12855 | 000006 | AP-010214-SB04B | Cyanide (total) |
| | Sample is biased high due to quality control standard recoveries above the acceptable limit. | | | |
| X | 12855 | 000007 | AP-010214-SB05A | Cyanide (total) |
| | Sample is biased high due to quality control standard recoveries above the acceptable limit. | | | |
| X | 12855 | 000008 | AP-010214-SB05B | Cyanide (total) |
| | Sample is biased high due to quality control standard recoveries above the acceptable limit. | | | |
| X | 12855 | 000009 | AP-010214-SB06A | Cyanide (total) |
| | Sample is biased high due to quality control standard recoveries above the acceptable limit. | | | |
| X | 12855 | 000013 | AP-010214-SB09A | Cyanide (total) |
| | The recovery for the laboratory control standard was above the acceptable limit. | | | |

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frplnarr.frx

- X 12855 000014 AP-010214-SB09B Cyanide (total)
The recovery for the laboratory control standard was above the acceptable limit.
- X 12899 000001 AP-010414-SB03A Cyanide (total)
The recovery for the laboratory control standard was above the acceptable limit.
- X 12899 000002 AP-010414-SB03B Cyanide (total)
The recovery for the laboratory control standard was below the acceptable limit.
- X 12899 000004 AP-010414-SB08A Cyanide (total)
The recovery for the laboratory control standard was below the acceptable limit.
- X 12899 000005 AP-010414-SB08B Cyanide (total)
The recovery for the laboratory control standard was below the acceptable limit.
- X 12899 000007 AP-010414-SB10A Cyanide (total)
The recovery for the laboratory control standard was below the acceptable limit.
- X 12899 000008 AP-010414-SB10B Cyanide (total)
The recovery for the laboratory control standard was below the acceptable limit.
- X 12899 000010 AP-010414-RS Cyanide (total)
Sample is biased high due to quality control standard recoveries above the acceptable limit.
- X 12899 000011 AP-010414-FB Cyanide (total)
Sample is biased high due to quality control standard recoveries above the acceptable limit.

APPENDIX 3. ENVIRONMENTAL PROFESSIONAL STATEMENT AND QUALIFICATIONS OF
PARTICIPATING PROFESSIONALS

DRAFT

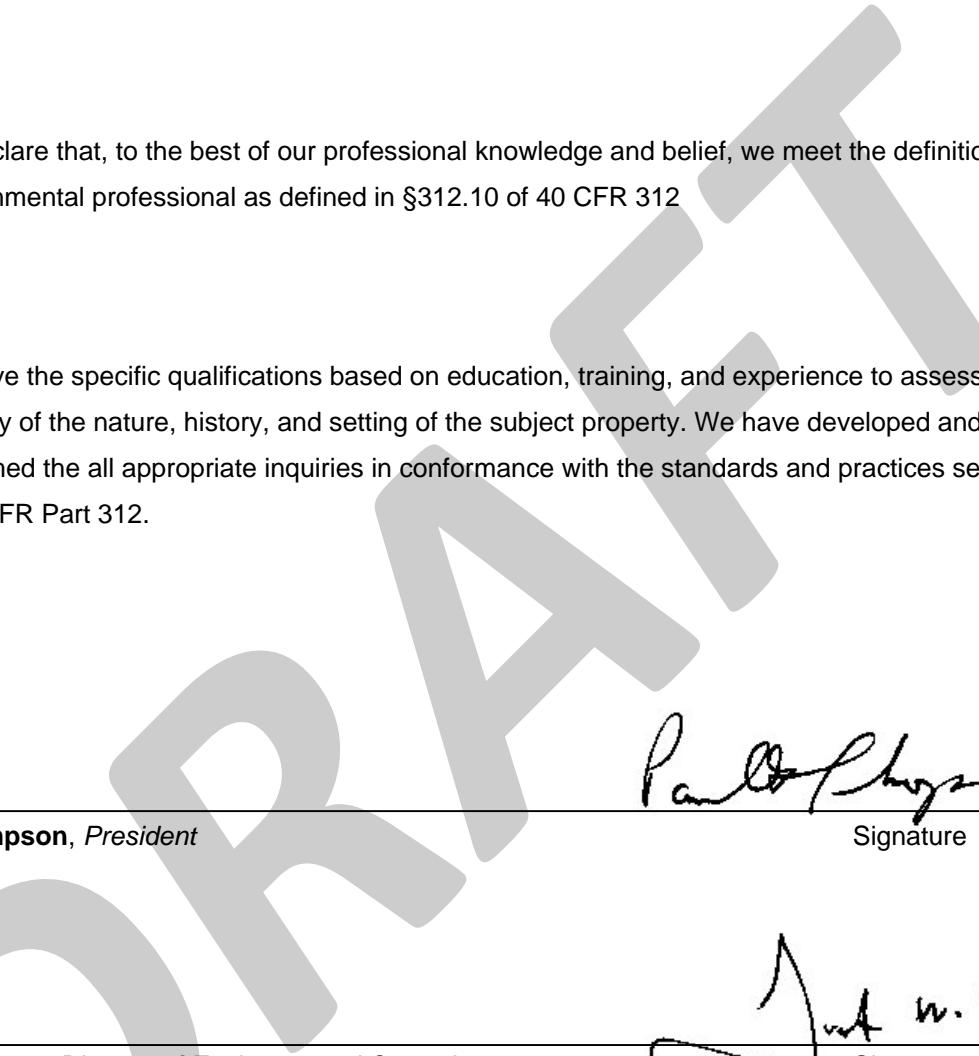
PMT & ASSOCIATES, INC.
ENVIRONMENTAL PROFESSIONAL STATEMENT

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental professional as defined in §312.10 of 40 CFR 312

and

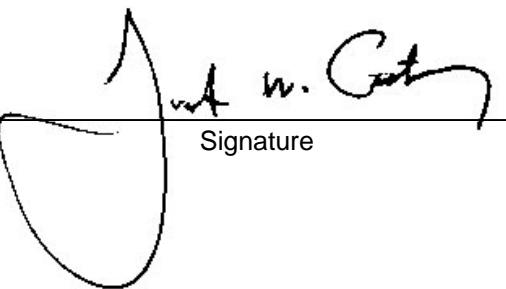
We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Paul G. Thompson, President




Signature

Justin W. Custer, Director of Environmental Operations



Signature

PAUL G. THOMPSON
PRESIDENT

EDUCATION:

The Johns Hopkins University	Graduate work in Environmental Science
Towson State University	Graduate work in Environmental Science
Towson State College	B.S. in Biology
U.S. Marine Corps	Sergeant

As President and CEO of PMT & Associates, Inc. Mr. Thompson guides the development and monitors the implementation of each of PMT's projects. Under Mr. Thompson's guidance and oversight, extensive and varied environmental investigations and remediation projects have been successfully completed.

Prior to founding PMT & Associates, Inc., Mr. Thompson served the State of Maryland as the Chief of the Industrial Point Source Division, Office of Environmental Programs (OEP), Department of Health and Mental Hygiene (DHMH). As Chief he administered programs responsible for the inspection and evaluation of all facilities requiring permits under Maryland State and Federal Water Pollution Control Laws. He directed all associated enforcement activities statewide and was responsible for all emergency response, including PCB incidents, in central Maryland. As a Regional Chief in the DHMH, Office of Environmental Programs, Mr. Thompson administered the inspection and evaluation of all facilities requiring permits under Maryland State and Federal Water Pollution Control, Hazardous Waste including PCB facilities and spills, Sanitary Landfill, and Sewage Sludge regulations and laws in the Region II Area (Baltimore City, Baltimore County, and Harford County).

Mr. Thompson has been a regular lecturer for lenders and law firms, including the Maryland Environmental Bar Association, on the subject of environmental investigations and incident remediation. He is qualified by the Maryland State Tax Court as an expert on the impact and cost of environmental issues related to impacts on real property. Mr. Thompson was a member of the E.50 Committee of the ASTM for the development and standardization of Phase II real estate investigations and compliance procedures.



ENVIRONMENTAL SPECIALISTS PROJECT MANAGEMENT.COMPLIANCE AUDITS.PERMITS.TRANSACTIONAL DUE DILIGENCE

JUSTIN W. CUSTER
VICE PRESIDENT OF OPERATIONS

EDUCATION

Towson University

B.S., Geology
May 2002

EXPERIENCE

Justin Custer joined PMT & Associates, Inc. in May of 2002. His current work consists of the following:

- Phase I Environmental Site Assessments
- Transaction Screens
- Compliance Audits
- Environmental Permitting
- Phase II Subsurface Investigations
- Hydrogeological Site Characterizations
- UST Removal Oversight
- VCP/Brownfield Project Management
- ACBM Investigations and Management Planning
- Site Remediation Design, Implementation, and O&M

In addition to the scope of work listed above, Mr. Custer is also responsible for providing guidance and oversight to all environmental operations at PMT and the development and maintenance of technology and information management.

Mr. Custer worked as a professor's assistant at Towson University from 1999-2002 under the Department of Physics, Astronomy, and Geosciences and was involved in various research projects in the fields of Environmental Science, Structural Geology, and Hydrogeology. During his studies at Towson University, Mr. Custer served as a full-time Student Technical Assistant at the Maryland Department of the Environment (MDE) from 2000-2002. While working for MDE he performed geographical Information system watershed database development; surface and groundwater under direct influence (GUDI) source water sampling; and sampling and analysis for phase III and IV of the Maryland Cryptosporidium Investigation.

CERTIFICATIONS & TRAINING

Mr. Custer currently holds the following certifications and training:

- MDE Certified Water Sampler / Federal Safe Drinking Water Act and State Regulations
- 16-hour Wellhead Protection and Inspection Certification
- OSHA 40-Hour Hazardous Site Supervisor Training
- State of Maryland Erosion and Sediment Control 'Green Card'
- Mold Inspection and Assessment
- 3-Day EPA AHERA Inspector
- 2-Day EPA AHERA Management Planner

03/09



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